

Notice of Allowability	Application No.	Applicant(s)	
	10/084,626	SRINIDHI ET AL.	
	Examiner	Art Unit	
	Antonio A. Caschera	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to After-final amendment filed, 08/30/05.
2. ☒ The allowed claim(s) is/are 4,5,9,10,17 and 18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>09/14/05</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

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DETAILED ACTION

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joel Lehrer on 09/14/05. The substance of the interview can be found in the attached Examiner-Initiated Interview Summary form. The application has been amended as follows:

1-3. (Cancelled)

4. (Previously Presented)

5. (Previously Presented)

6-8. (Cancelled)

9. (Currently Amended) A method for discriminating between textual content and graphical content in an image comprising:

receiving a first plurality of pixel values for a pixel line segment and a second plurality of pixel values for the pixel line segment;

calculating a plurality of spatial gradients for the pixel line segment based on the first plurality of pixel values of adjacent pixels;

determining a smoothness index in response to the plurality of spatial gradients by calculating a first statistical characteristic of the plurality of spatial gradients by squaring each of the spatial gradients to generate a plurality of squared gradients; and summing the squared gradients; calculating a second statistical characteristic of the plurality of spatial gradients, and dividing the second statistical characteristic by the first statistical characteristic to generate the smoothness index;

calculating a value by combining the second plurality of pixel values; and identifying the pixel line segment as one of a text segment or a graphic segment by comparing the smoothness index to a first threshold value and the calculated value of the second plurality of the pixel values to a second threshold value.

10. (Previously Presented)

11-16. (Cancelled)

17. (Previously Presented)

18. (Previously Presented)

Response to Arguments

2. The cancellation of claims 1-3, 6-8 and 11-16 is noted thus leaving previously indicated allowable claims 4, 5, 9, 10, 17 and 18.

Allowable Subject Matter

3. Claims 4, 5, 9, 10, 17 and 18 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

In reference to claims 4, 9 and 17, the prior art of record (Mutoh et al. (U.S. Patent 6,631,210 B1), Ng (U.S. Patent 5,502,793), Zhu (U.S. Patent 6,195,459 B1), Otsu et al. (U.S. Patent 6,466,693 B1), Danisewicz (U.S. Patent 6,233,353 B1) and Li et al. (U.S. Patent 6,529,629 B2)) does not explicitly disclose squaring each of the spatial gradients to generate a plurality of squared gradients and generating the first statistical characteristic by summing the squared gradients, in combination with the further limitations of claims 4, 9 and 17 respectively.

In reference to claims 5, 10 and 18, the prior art of record (Mutoh et al. (U.S. Patent 6,631,210 B1), Ng (U.S. Patent 5,502,793), Zhu (U.S. Patent 6,195,459 B1), Otsu et al. (U.S. Patent 6,466,693 B1), Danisewicz (U.S. Patent 6,233,353 B1) and Li et al. (U.S. Patent 6,529,629 B2)) does not explicitly disclose generating a plurality of absolute gradients by determining an absolute value of each of the spatial gradients, determining a sum value by summing the absolute gradients and generating the second statistical characteristic by squaring the sum value, in combination with the further limitations of claims 5, 10 and 18 respectively.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

References Cited

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:
 - a. Gallagher (U.S. Patent 6,778,699)

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- Gallagher discloses a method of detecting line segments and intersections using pixel squared gradient calculations.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

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9/14/05

A handwritten signature in black ink, reading "Matthew C. Bella". The signature is fluid and cursive, with the first name "Matthew" and last name "Bella" clearly legible.

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600